REMARKS

Applicants respectfully request favorable reconsideration of this application.

Claims 1-4 and 6 stand rejected under 35 U.S.C 103 over GB 2,165,396 to Lewin et al. (Lewin) in view of IEEE "A UHF Buoyant Antenna" by Smith et al. (Smith). This rejection is respectfully traversed.

Independent Claim 1 sets forth, *inter alia*, an antenna dimensioned so as to operate in an evanescent mode at a resonant frequency less than the cut-off frequency, and independent Claim 3 sets forth, *inter alia*, the length of the antenna being less than 0.25λ and the diameter of the antenna being less than 0.02λ, where λ is the free space wavelength at the operating frequency, the antenna being dimensioned so as to operate in an evanescent mode at a resonant frequency less than the cut-off frequency. The Applicants respectfully submit that the above-recited features of Claims 1 and 3 are neither disclosed, nor fairly suggested by the art of record, including Lewin and Smith.

The Office contends that "the design limitations regarding the slot length and antenna diameter are met by various design embodiments included in Lewin et al., for example, L =1.2 m, a = 2 cm and f = (242 MHz - 490 MHz)". The Office further contends that Lewin discloses that the choice of a resonator length equal to half the free-space wavelength is not mandatory, and thus provides a suggestion of using other design choices regarding the length of the antenna (see Lewin, 1: 86-90). The Applicants disagree.

For example, the magnitude of the difference between the Lewin antenna free-space wavelength of "½" and the "¼" free space wavelength of the Applicants' antenna is very great (2:1 ratio). Further, if one of ordinary skill in the art would follow the suggestion provided by the above referenced portion of Lewin, the difference between the free space wavelengths would not be reduced as suggested by the Office. To the contrary, the difference would be increased even further, because the suggestion provided by Lewin is to

increase (rather than decrease) the ½ free space wavelength. Particularly, Lewin (1:86-90) states that "the choice of the resonator length L to equal half the free-space wavelength, as indicated by Lee, is not mandatory and <u>a greater length</u>, such as a full wavelength, would have advantages . . ." (emphasis added).

The Office further contends that Fig. 5 shows a decrease in size. However, Fig. 5 does not illustrate a reduction in a size of the antenna. Rather, Fig. 5 illustrates a difference in dielectric foam jacket thickness in a tunable antenna as compared to a dielectric foam jacket thickness of the non-tunable antenna illustrated in Fig. 4. As the Office will note, the core tube dimension (a = 2 cm) is the same in both Fig. 4 and Fig. 5 (see Lewin, 5:11-14).

The secondary reference, Smith cannot supply the deficiencies of Lewin. For example, the antenna of Smith also has comparatively large dimensions (see Fig. 1(b) of Smith).

Since the Lewin/Smith combination suggests upsizing rather than downsizing the dimensions of an antenna, it is not at all apparent from either Lewin or Smith that coupling a slot of the antenna of Lewis to a feed circuit at its midpoint will produce an antenna being dimensioned so as to operate in an evanescent mode at a resonant frequency less than the cut-off frequency as set forth in Claims 1 and 3.

Accordingly, the rejection should be withdrawn, and Claims 1 and 3 should be allowed, as should their dependents.

A Notice of Allowance is respectfully solicited.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 any fees that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been requested separately, such extension is hereby requested.

Respectfully submitted,

Miles & Stockbridge P.C.

Dennis P. Clarke
Registration No. 22,549

Percy L. Square
Registration No. 51,084

DPC/PLS

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1751 Pinnacle Drive
Suite 500
McLean, VA 22102-3833
Tel: (703) 903-9000
Fax: (703) 610-8686